Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently Amended) A method for enhancing image resolution, wherein the method is applied to a high-resolution image data carrier for storing or playing a high-resolution image at least twice the standard image resolution, the method comprising the following steps:

[[a.]]defining a video-audio data format and a plurality of user data formats on the high-resolution image data carrier;

[[b.]]decomposing the high-resolution image into a plurality of primary images data of standard image resolution;

[[c.]]encoding at least one primary image data to form a disc playable image data;

[[d.]]storing one set of the primary image data into the video-audio data format of the high-resolution image data carrier and storing another primary image data set separately into the plural of user data formats;

playing back one set of the primary image data from the video-audio data format by any playback apparatus if low resolution is required; and

[[e.]]combining ~~and restoring~~ one set of the primary image data from the video-audio data format and another primary image data from the user data

formats to form a combined playable image data ~~into the high-resolution image~~ and playing back the combined playable image data ~~playable~~ by a specific playback apparatus if high resolution is required;

wherein the specific playback apparatus comprises:

a readout unit ~~to read~~ for reading out the plural user data formats on the high-resolution image data carrier; and

an image-combining unit ~~to acquire~~ for acquiring the primary image data at a same position of the user data format to combine and restore the high-resolution image.

2. (Original) The method according to claim 1, wherein the image data carrier is a DVD medium with a resolution of 720x480.

3. (Original) The method according to claim 1, wherein the image data carrier is a VCD medium with a resolution of 352x240.

4. (Original) The method according to claim 1, wherein the image data carrier is an SVCD medium with a resolution of 480x480.

5. (Currently Amended) The method according to claim 1, wherein the video-audio data format ~~in step (a)~~ is a primary viewing angle setting format of MPEG2 and the user data format is in a secondary viewing angle setting format.

6. (Original) The method according to claim 1, wherein the video-audio data format and the user data format are the video-audio data format and the user data format of MPEG1, respectively.

7. (Currently Amended) The method according to claim 1, wherein the ~~manner of~~ decomposing ~~high-resolution image in~~ step ~~(b) is~~ comprises: evenly decomposing and distributing the plural image pixels of the high-resolution image, adjacent along a vertical direction or a horizontal screen on a screen, into corresponding plural pixels of primary image data, wherein the corresponding plural pixels are located at a same pixel position.

8. (Canceled)

9. (Currently Amended) The method according to claim [[8]] 1, wherein the image compression technique is MPEG1.

10. (Currently Amended) The method according to claim [[8]] 1, wherein the image compression technique is MPEG2.

11. (Canceled)

12. (Currently Amended) A method for enhancing the image resolution, wherein the method is applied to a high-resolution image data carrier for storing or playing a

high-resolution image that is at least twice the standard ~~image~~ resolution, the method comprising the following steps:

[[a.]] setting the high-resolution image data carrier to have a video-audio data format and plural user data format;

[[b.]] decomposing the high-resolution image into plural primary image data of standard image resolution;

[[c.]] storing the plural primary image data into the user data format;

[[d.]] calculating an average of the pixels at the same positions in the plural primary image data for forming a secondary image data;

[[e.]] encoding the secondary image data to form a disc playable image data;

[[f.]] storing the secondary image data into the video-audio data format of the high-resolution image data carrier;

playing back the secondary image data from the video-audio data format by any playback apparatus if standard resolution is required; and

combining and restoring secondary image data from the video-audio data formats and another primary image data from the user data formats to form ~~into~~ the high-resolution image and playable by a specific playback apparatus if high resolution is required;

wherein the specific playback apparatus comprises:

a readout unit ~~to read~~ for reading out the plural user data formats on the high-resolution image data carrier; and

an image-combining unit ~~to acquire~~ for acquiring the secondary image data and the primary image data at a same position of the user data format to combine and restore the high-resolution image.

13. (Original) The method according to claim 12, wherein the image data carrier is a DVD medium with a standard-resolution of 720x480.

14. (Original) The method according to claim 12, wherein the image data carrier is a VCD medium with a standard-resolution of 352x240.

15. (Original) The method according to claim 12, wherein the image data carrier is an SVCD medium with a standard-resolution of 480x480.

16. (Currently Amended) The method according to claim 12, wherein the video-audio data format ~~in step (a)~~ is a primary viewing angle format setting of MPEG2 and the user data format is a secondary viewing angle setting.

17. (Original) The method according to claim 12, wherein the video-audio data format and user data format are the video-audio data format and user data format of MPEG1, respectively.

18. (Currently Amended) The method according to claim 12, wherein ~~a manner of~~ the decomposing ~~the high-resolution image in~~ step ~~(b) is~~ comprises: evenly

decomposing and distributing the plural image pixels in the adjacent vertical and horizontal arrangement of the high-resolution image evenly into the pixels at same positions of the plural primary image data.

19. (Canceled)

20. (Currently amended) The method according to claim [[19]] 12, wherein the image compression method is MPEG1.

21-25. (Canceled)

26. (Currently Amended) An apparatus for encoding picture data to enhance image resolution and storing the high-resolution image at least twice the standard image resolution to a image data carrier, the encoding apparatus comprising at least:

an image-decomposing unit, ~~which reads~~ for reading out the high-resolution image and ~~decompose~~ decomposing the high-resolution image into plural primary image data of standard image resolution;

an image operation unit, for calculating an average value of pixels at the same position from plural primary image data for forming secondary image data;

an image-encoding unit utilizing an image compression technique to encode the primary and secondary image data and form a playable image data; ~~and~~

an image storage unit, separately storing the plural primary image data into plural user data format of the image data carrier; and storing the secondary image data in a video-audio data format of the image data carrier;

an image-combining unit for acquiring the secondary image data from the video-audio data format and the primary image data from the user data format to form a combined playable image data; and

a playing unit for playing back one set of the primary image data from the video-audio data format if low resolution is required and playing back the combined playable image data if high resolution is required.

27. (Original) The encoding apparatus according to claim 26, wherein the image data carrier is a DVD, VCD or SVCD medium.

28. (Original) The encoding apparatus according to claim 26, wherein the user data format is a secondary viewing angle data format of MPEG2 and the video-audio data format is a primary viewing angle data format.

29. (Canceled)

30. (Previously Presented) The encoding apparatus according to claim 26, wherein the image compression technique utilized in image encoding unit is MPEG1 or MPEG2.

31. (Original) A playback apparatus for playing the resolution enhanced image, which plays a high-resolution image data carrier with at least twice a standard image resolution, the playback apparatus at least comprising:

a readout unit to read out the plural user data format on the high-resolution image data carrier; and

an image-combining unit to acquire each pixel at a same position of every user data format to combine and restore the high-resolution image.

32. (Original) The playback apparatus according to claim 31, wherein the high-resolution data carrier is a DVD, VCD or SVCD medium.

33. (Original) The playback apparatus according to claim 31, wherein the user data format is a secondary viewing angle data format of MPEG2.

34. (Original) The playback apparatus according to claim 31, further comprising: a decoding unit to decode the image data carrier by using image compression technique and forming a playable image signal.

35. (Original) The playback apparatus according to claim 34, wherein the image compression technique used in the decoding unit is MPEG1 or MPEG2.

36. (New) The method according to claim 1, wherein the decomposing step comprises: evenly decomposing and distributing the plural image pixels of the

high-resolution image, adjacent along a vertical direction and a horizontal screen on a screen, into corresponding plural pixels of primary image data, wherein the corresponding plural pixels are located at a same pixel position.